

Notes on Caupolicanine Bees of Arizona (Hymenoptera: Apoidea)

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Abstract *Caupolicana elegans* from near Portal, Arizona is the third known species of the United States. The males of *Ptiloglossa arizonensis* and *P. jonesi* are also distinguished and described.

The genus *Caupolicana* Spinola has been represented by only two species in the United States although others occur in Mexico and South America. The beautiful species described below is thus a welcome addition to our fauna, although probably it is more indigenous to Sonora, Mexico, and ranges sparsely north of the border.

Caupolicana elegans, new species

This species is easily distinguished from *C. yarrowi* (Cresson) and *C. electa* (Cresson) by the lack of black hair on the abdomen.

MALE Integument black, tinged with brown on abdomen and legs. Apical depression of tergites of abdomen subtranslucent, brownish testaceous. Front and middle tarsi and small joints of hind tarsi ferruginous. Antennae dark, flagellum brown beneath toward apex, terminal joint reddish. Labrum and mandibles reddish brown, apex of mandibles piceous. Tegulae testaceous. Wings dusky hyaline, nervures dark ferruginous, subcosta black.

Head about as broad as long, eyes somewhat more convergent above than in *yarrowi*. Ocelli large, lateral pair about one-third of their own diameter from margin of nearest eye and somewhat more than their diameter from margin of vertex. First joint of flagellum as long as next four joints combined; second joint of flagellum no longer than wide. Mandibles moderately long, nearly reaching base of each other, widest at, or just before, a small inner tooth at about one-fifth of the length from apex. Venation of the *Caupolicana* type, similar to that of *yarrowi* and *electa*, but first recurrent nervure received by second submarginal cell, which is rather less than one-third as long as third submarginal cell on the cubitus. Spurs of middle and hind tibiae slender and almost straight. Sixth ventral segment of abdomen rectangularly notched at apex, the triangular tooth on each side of notch rounded at apex (margin of segment evenly rounded in *yarrowi* and *electa*). Seventh ventral plate more as in *electa* than *yarrowi*, the slender divaricate, subapical processes with an oval terminal expansion. Eighth ventral plate more as in *yarrowi* than *electa*, about four times longer than wide, gradually narrowed at base, apical part rather narrowly oval and bluntly rounded at apex; margins of plate with short fringe of hair (fringed with long hair in both *yarrowi* and *electa*). Genital armature much as in *yarrowi* and *electa* but the parts more slender; parameral lobes (gonostyli) tapering gradually from broad base to blunt apex.

Pubescence bright fulvous, paler beneath and on head and abdomen, very dense and concealing surface on thorax, and comparatively thin and revealing surface on abdomen. Hair on disk of tergites beyond basal segment short and reclinate, that on tergite 1, and subapically on tergites 4, 5, and 6 comparatively long. On apical margin of tergites 2 through 5 a narrow band of white pubescence, very broadly interrupted on tergites 2 and 3, much less interrupted on tergite 4 and entire on tergite 5. Venter of abdomen with long pale hair, more fulvous on each side; segment 5 with rather short apical fringe, but with

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tuft of long fulvous hair on outer margins; disk of segment 6 nearly nude, but with short hair on apical margin. Hair of legs pale fulvous, long on femora, and that on underside of tarsi bright fulvous.

Length, about 14 mm; width of abdomen, 5 mm; length of anterior wing, 10.3 mm.

TYPES Holotype male, Southwest Research Station, 5 miles west of Portal, 5,400 feet, Chiricahua Mountains, Cochise County, Arizona, on *Melilotus alba*, July 23, 1956 (C. and M. Cazier), in the collection of the American Museum of Natural History.

Ptiloglossa arizonensis Timberlake

This species was described from a series of females collected at Portal, Arizona, in July and August, 1944, by W. W. Jones. The male is new.

MALE Integument of head and thorax black, tinged with brown on posterior face of propodeum. Base of tergites 2 to 5 of abdomen slightly bluish, and apical half of same segments flavotestaceous; tergite 1 blackish, its flavotestaceous apex comparatively narrow. Legs fulvo ferruginous to brownish ferruginous, more infuscated at base, with femora partly dark. Scape of antennae yellowish, pedicel more fulvous, and flagellum fuscous above and reddish brown beneath. Labrum and mandibles piceous, middle half of mandibles distinctly reddened. Tegulae fulvous. Wings fulvo-hyaline, nervures ferruginous, subcosta blackish.

Head rotund; eyes much broader than cheeks and covering above. Ocelli large, posterior pair half their diameter from nearest eye and about twice their diameter from occipital margin. Antennae inserted above middle of face, sockets much closer to margin of eyes than to each other; first joint of flagellum as long as next four joints combined; second joint broader than long. Mandibles stout, with a small inner tooth. Outer fixed spur of hind tibiae very stout, curved inward and acute at apex; inner spur slender and much longer. Sixth sternite of abdomen rounded apically, with a broad low marginal ridge. First recurrent nervure received close to base of second submarginal cell.

Pubescence bright fulvous, paler on face, cheeks, underparts of thorax and abdomen, and extremely dense on thorax. Face with much comparatively short hair, that on clypeus appressed and proclinate over most of disk, but face also with many long erect hairs. Hair on tergites 2 to 4 short, reclinate, appressed, and rather dense but not concealing surface; hair on apical part of tergite 1, on disks of tergites 5 and 6 and on venter long and dense. Hair also long and dense on posterior side of front and middle femora and on anterior side of hind femora; hair on underside of hind basitarsi bright reddish fulvous. Sculpture mostly concealed, but clypeus slightly dullish, with close shallow punctures, and tergites 2 to 4 with minute dense setigerous punctures. Length, about 16 mm; anterior wing, 13.6 mm; width of abdomen, 7 mm.

One male, 5 miles west of Portal, Arizona, August 3, 1958 (Paul Opler). One male, S.W.R.S., 5 miles west of Portal, 5,400 ft., Cochise County, Arizona, August 1, 1956 (C. & M. Cazier). Collected on *Melilotus alba* Desrousseaux.

Ptiloglossa jonesi Timberlake

Only two females of *jonesi* were taken at Portal with the types of *arizonensis*, but the species seems to be more common at Douglas, Arizona; and two males are now at hand. The male differs from the male of *arizonensis* in having the clypeus more exposed and yellowish, the fixed spur of hind tibiae slender, and the sixth sternite armed with a broad, conical, subapical process.

MALE In most characters similar to male of *arizonensis*. Integument of head and thorax blacker. Metallic color of abdomen more greenish than blue, and the apical depression of

tergites pale yellowish green. Clypeus yellow. Scape of antennae yellow, infuscated slightly above; pedicel and underside of first joint of flagellum dull ferruginous; flagellum fuscous above, second joint entirely dark, following joints brown beneath. Legs somewhat darker, hind tibiae and basitarsi rather dark brown. Ocelli somewhat larger than in *arizonensis*, posterior pair about one-third of their diameter from margin of eyes. Outer spur of hind tibiae slender except at extreme base and moderately curved. Sixth sternite with a conical process at apical middle, its tip sharply compressed and projecting obliquely backward. First recurrent nervure almost perfectly interstitial.

Pubescence nearly as in *arizonensis*, but hair of cheeks and parocular areas of face whitish. Hair of clypeus thin, proclinate and exposing surface. Hair of venter of abdomen long and loose, surface exposed. Sculpture similar, but clypeus shining, with close punctures on each side of a nearly impunctate median space broadening anteriorly. Venter with fine, rather well-separated setigerous punctures. Length, about 14 to 15 mm; anterior wing, 12.5 mm; width of abdomen, 5.5 mm.

One male, Douglas, Arizona, at light trap, August 17, 1962 (M. A. Cazier); 1 male, 1 mile east of Douglas, on *Cucurbita foetidissima*, 6:15-6:45 a.m., August 8, 1962 (Cazier).

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